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THE SMITH RIVER

AN OPPORTUNITY
FOR QUALITY



REPORT TO GOVERNOR FORREST H. ANDERSON
AND THE 42nd MONTANA LEGISLATIVE ASSEMBLY

December 1, 1970


Prepared by

THE GOVERNOR'S COUNCIL ON
NATURAL RESOURCES AND DEVELOPMENT

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Council on Natural Resources and Development

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GEORGE MCGAFFICK
COUNCIL COORDINATOR

DOUGLAS G. SMITH
CHAIRMAN

November 20, 1970

Honorable Forrest H. Anderson
Governor of Montana
Helena, Montana 59601

Dear Governor Anderson:

It is with great pleasure that I transmit to you the findings of the Governor's Council on Natural Resources and Development in relation to the Smith River.

The study that this report represents was called for by House Joint Resolution 12, passed by the 1969 Legislature. Being aware of your personal interest in Montana's wildlife and recreational resources, I am sure you will find this report of great personal interest.

In addition to accomplishing the task assigned by the 1969 Legislature, this report also demonstrates the ability of the various agencies in state government to cooperate constructively within your Council on Natural Resources and Development.

It is with great pleasure that I transmit this report to you.

Sincerely yours,

COUNCIL ON NATURAL RESOURCES AND DEVELOPMENT

Douglas G. Smith
Chairman

DGS/nw
Enclosure

STATE OF MONTANA:

DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT
DEPARTMENT OF STATE LANDS AND INVESTMENTS
OUTDOOR RECREATION ADVISORY COMMITTEE
WATER WELL CONTRACTORS EXAMINING BOARD

SOIL CONSERVATION COMMITTEE
DEPARTMENT OF HEALTH
DEPARTMENT OF AGRICULTURE
FISH AND GAME COMMISSION

STATE HIGHWAY COMMISSION
BUREAU OF MINES AND GEOLOGY
OFFICE OF THE STATE FORESTER
WATER RESOURCES BOARD

SANITARIANS REGISTRATION COUNCIL
OIL AND GAS CONSERVATION COMMISSION
GRASS CONSERVATION COMMISSION
WATER POLLUTION CONTROL COUNCIL

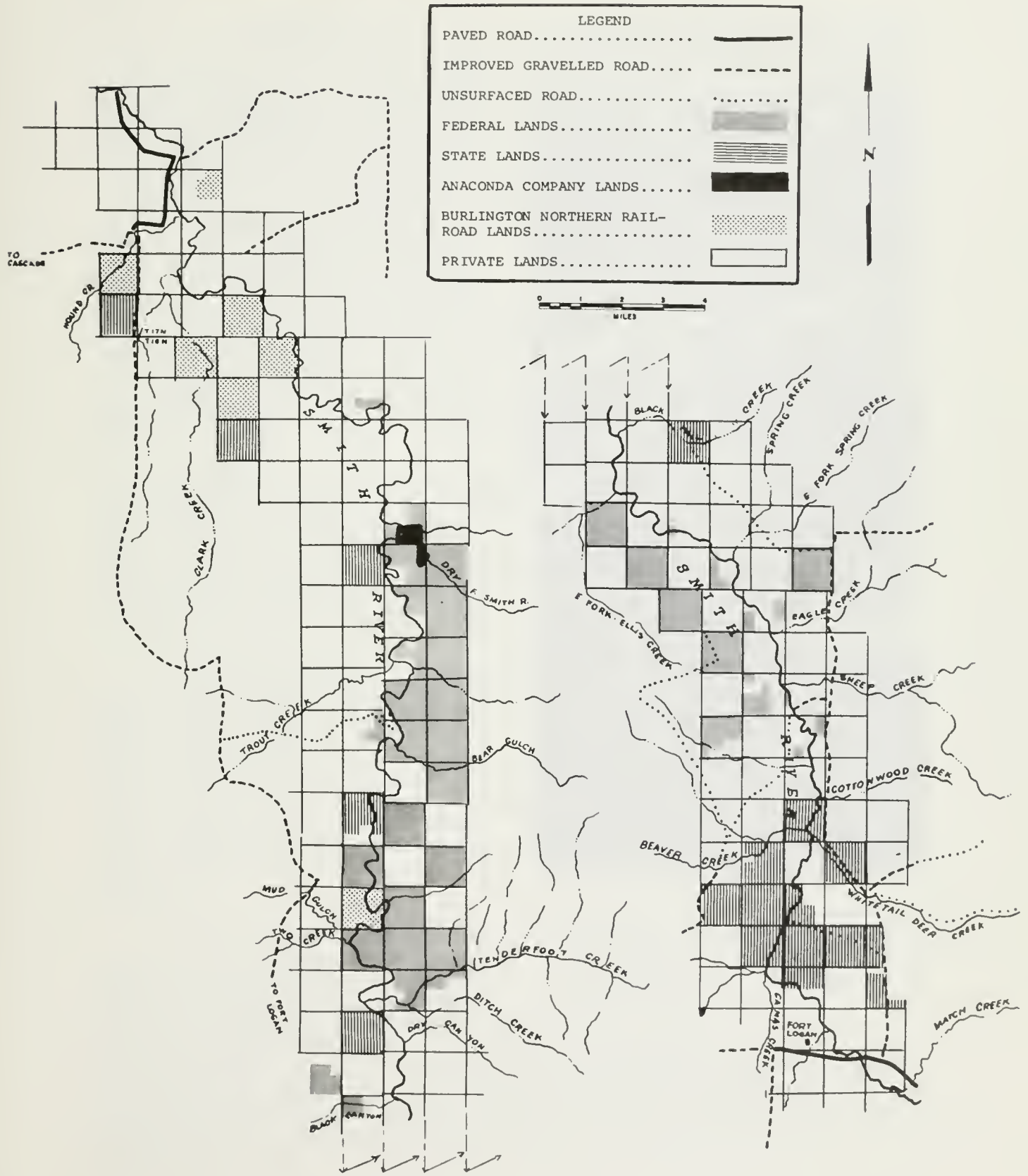
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SMITH RIVER ORIENTATION MAP



INTRODUCTION

The Smith River in west-central Montana is formed by the junction of its south fork which drains a portion of the Castle Mountains, and the north fork arising from the south end of the Little Belts. These forks join to form the main stem just west of the town of White Sulphur Springs. The river then flows northwest through a relatively wide valley area between the Big and Little Belt Mountains, until it enters a deep, narrow canyon several miles below Fort Logan. After emerging from the canyon, the river meanders through rolling grasslands until it joins the Missouri near Ulm, Montana.

One of the larger tributaries of the Smith River is Hound Creek, entering from the west near Orr. Hound Creek drains the northern portion of the Big Belt Mountains; some of its tributaries extend high up the slope of the mountain front.

Tributary drainages in the upland area include North Fork, Newlan Creek, Whitetail Deer Creek, Sheep Creek, Eagle Creek and Tenderfoot Creek, which drain the Castle and Little Belt Mountain area. Birch Creek, Camus Creek, Elk Creek, Thomas Creek, Benton Creek, Beaver Creek, Rock Creek and Freeman Creek drain the southwest flank of the Big Belt Mountains.

Below Fort Logan, the Smith River valley narrows and becomes a deep and rather spectacular canyon incised for about a thousand feet into the predominantly limestone Paleozoic strata. The attitude of the strata indicates the river has cut across the axis of the central Montana arch, and in so doing has exposed the Paleozoic strata in sequence south to north from basal Cambrian upward through Cambrian, Devonian, Mississippian, Jurassic, and Cretaceous strata. The latter two periods are exposed from near the Hound Creek junction northward.



The impressive exposures of limestone and dolomite layers in the walls of Smith River Canyon rival America's most scenic attractions.

The Smith River valley is a geologist's paradise. Numerous and varied geologic processes are evident, and exposures of rock strata ranging in age from pre-Belt crystalline metamorphics to Tertiary are abundant. The rock strata are thrown into folds, extensively faulted, and intruded by several varieties of igneous rocks. The impressive exposures of limestone and dolomite layers in the walls of Smith River canyon rival America's most scenic attractions.

Surrounding this remote river there is a major highway system, connecting several population centers. The Interstate Highway No. 15 to the north and west; U. S. Highway 12 to the south; and U. S. Highway 89 to the east provide access to White Sulphur Springs (and the Smith River area) from Helena, Great Falls, Bozeman and Livingston. This area has a current population of well over 150,000.

ARCHEOLOGY AND HISTORY

For many centuries prior to white man's occurrence in the Smith River basin, aboriginal tribes were attracted to the area. The recesses of the canyon offered shelter from the harsh winters and concentrations of game animals provided food, clothing and other of life's necessities. Remnants of aboriginal occupation can still be found in the form of numerous tipi rings, and occasional artifacts and pictographs.

White man's first intrusion into the area resulted from the stimulus of the fur trade. Hardy trappers undoubtedly entered the area in search of furs and perhaps floated their catch down the Smith River and the Missouri to trade centers below.

In the early 1860s the discovery of gold in the surrounding mountains stimulated a heavy influx of miners. Camp Baker, established in 1869 by U. S. troops to provide protection to miners and settlers, was later moved twelve miles south and renamed Fort Logan. When conflicts with Indians became less serious, Fort Logan was abandoned. A well preserved blockhouse is still standing.

As gold was depleted and mining operations abandoned, farming and ranching began to take over as the predominant economy, and they remain so today.

FISH AND WILDLIFE

The Smith River offers excellent sport fishing for recreationists willing to get away from the crowd and expose themselves to a semi-wilderness experience. Recent surveys have indicated that the most numerous game fish in the Smith River are mountain whitefish. Rainbow trout, however, form the mainstay of the present fishery. Also highly important from an angler's point of view, are the brown trout which grow larger and enjoy the status of the trophy fish in the Smith River. Other game fish presently found in the Smith River include brook trout, and cutthroat trout. Non-game fish found in the Smith include longnose sucker, white sucker, mountain sucker, longnose dace, stonecat, burbot (ling), and mottled sculpin. A few carp are present in the lower portion of the Smith River near Hound Creek.



The Smith River offers excellent sport fishing for recreationists willing to get away from the crowd and expose themselves to a semi-wilderness experience.

While less well known than the fishery, wildlife populations also contribute to the quality of this unique area. The canyoned portion of the river in addition to supporting a resident mule deer population supplies "critical" winter ranges for mule deer and elk from both the Big and Little Belt Mountains. It also provides a year-round home for ruffed grouse, raccoons, and a variety of other wildlife species generally associated with river bottom habitat. White-tailed deer, pheasants, and sharp-tailed grouse are found throughout the lower or flood-plain segment of the river where "shrubby" vegetation interspersed with agriculture provides excellent habitat.



The canyoned portion of the river supports resident mule deer and supplies critical winter range for mule deer and elk.

SCENIC BEAUTY

The Smith River canyon has long been known to a relative few as an area of unique beauty and solitude. The upper reaches are dominated by the timbered slopes of the Belt Mountains and the broad grasslands of the Smith River valley. As visitors floating the river move down stream, they soon encounter the rugged limestone cliffs and outcroppings on either side towering high overhead. Always the dominant feature, these cliffs sometimes appear to block passage completely then slip by as the channel twists and turns between the enclosing walls. The buff-colored rocks stained with hues of brown, red and yellow offer ever-changing vistas of color and form.

Dense stands of evergreens line the canyon rims and send fingers of green into the canyon to meet the meadows and bottomlands along the river. Washed gravel bars and shaded benchlands offer frequent opportunity to stop and absorb the unique beauty of the canyon; a beauty which is enhanced by a feeling of remoteness, solitude and a closeness to nature which can be found only where man's intrusions are not evident.



The Smith River canyon has long been known to a relative few as an area of unique beauty and solitude.

PRESENT RECREATION USE

Present recreational use is influenced strongly by the remote, semi-wilderness nature of the area. Access to the Smith River is limited by the road system in the immediate area and by the lack of developed access points and recreation areas on the river. This remoteness of the river limits its current use, not only in terms of numbers of persons, but also as to types of recreation activities possible. A single, unpaved road generally parallels the river through its drainage area, but provides only occasional access to the river.

Recreation in the canyon is thus limited to those who are actively seeking the type of experience that the Smith River offers. The most common users are persons who float the river for the purpose of fishing, camping, photographing, and generally enjoying the scenic beauty.



"Floating the Smith" has become an increasingly popular sport in recent years.

Nearly every type of craft imaginable has been used to transport adventurous recreationists. The river winds through wild rugged country, but the river itself is gentle enough to allow most excursions to pass without incident. Anglers fish as they float along or else stop at likely spots to try their luck. With good river flow the Smith can be floated from Sheep Creek to the mouth of Hound Creek in two long days.

The floating season on the Smith River is largely controlled by the water levels and flows. Floating usually begins about the first of July after the crest of spring runoff when the water begins to clear. The river can be floated successfully until about mid-August, at which time water levels become so low that boat travel over riffles and shallow areas is difficult.

Hunters are also attracted to the area, but the difficult access restricts them primarily to areas outside the canyon proper. Deer, elk and game bird hunting provides high quality sport where access is obtainable.

Trailbike and snowmobile activity are other increasingly popular recreational pursuits in the area.

Retreat to summer cabin sites is another form of recreation becoming increasingly popular on the Smith River. Suitable locations which are accessible by road are relatively few, and such developments are not common as yet.

RIVER ECOLOGY

Streams vary in their capacity to sustain fisherman use. Preliminary data gathered on the fish population of the Smith River along with present angler success reveals that at the present time environmental problems are depressing the productive potential of the Smith River. To the extent that the river's history can be reconstructed, a limited history of the fishery can be presented along with existing conditions.

The early miners and fur trappers that depended on the land for their livelihood probably had no trouble filling larders with cutthroat trout and grayling. After the turn of the Twentieth Century, introductions of exotic fish species (rainbow trout, brown trout and brook trout) and exploitation of water and soil have contributed to near extinction of the native cutthroat trout and grayling. A few old timers from the White Sulphur Springs area remember when grayling were abundant in the Smith River above Fort Logan. Grayling have not been reported in this area for at least the past twenty years. Cutthroat trout are occasionally found in the main stem of the Smith River; however, these are transients from a few tributary streams that still contain cutthroat populations.

At the present time the most numerous game fish in the Smith River are mountain whitefish. This native fish is lightly utilized. Due to the remoteness of the Smith River canyon a winter fishery for the species has not developed.

Rainbow trout form the bulk of the fishery throughout most of the Smith River. Recent surveys reveal rainbow trout comprise over eighty percent of the total trout population. The majority of these fish creel by anglers average about ten to fourteen inches in length. Specimens over two pounds are rare.

Brown trout are found throughout the Smith River canyon, but comprise less than twenty percent of the total trout population. Specimens from one to two pounds are common within the brown trout population. A few fortunate anglers have reported taking brown trout weighing up to ten pounds.

Other game fish now present in the river are brook trout and a few cutthroat trout. These trout are occasionally found near the mouths of tributary streams and form only a minor portion of the fishery.

Studies conducted on the Smith River trout populations in the past two years have revealed high mortality of rainbow trout. Few of these fish live more than three years, which accounts for the paucity of rainbows over two pounds. At least two reasons may account for the short life span:

- (1) The river habitat may not be suitable for longevity of rainbow trout. Review of the U. S. Geological Survey flow records reveals extremely low flows occur for a period of time nearly every winter and about once in every five years during late summer. This restricts the available habitat and forces fish to live under undesirable conditions. Also, summer water temperatures reach levels not conducive to optimum trout growth and survival.

During July and August of 1970, maximum daily water temperatures were found to reach 70 to 76 degrees Fahrenheit on about fifty percent of the days. Extensive use of water for agriculture in the upper drainage partially accounts for these warm temperatures. The upper temperature limits believed optimum for trout by fishery scientists is 68 degrees. Temperatures warmer than 68 degrees create conditions more favorable for diseases, parasites, and rough fish.

(2) The present level of harvest by anglers may be approaching the upper limit the rainbow population can withstand.

Rainbow trout form the backbone of the fishery in the Smith River, so management of the fishery should be based on this fish. It would be an unsound practice to plant more brown trout in the river because if the habitat were suitable, brown trout would naturally be the predominant trout species. Because the habitat available for trout appears to be in delicate balance, caution should be exercised in future land use and development within the drainage. A substantial increase in fishing pressure would probably have an adverse effect on the quality of the fishery now enjoyed, and it may become necessary in the future to reduce creel limits. Extensive fish planting would be an expensive way of treating the apparent problem while ignoring the real habitat problem. Further, it is only fitting that the rugged, remote canyon area of the Smith River be inhabited by wild, naturally reared trout.

ECONOMY OF THE AREA

Meagher County and the southern part of Cascade County is an agricultural and forested rural area. Ninety-three percent of the total value of the farm products from this area is derived from livestock. A large percentage of the land area is controlled by the national forests. The distribution of employment shows that between forty-eight and fifty percent of those employed (other than proprietors of owner-operated farms) were employed in manufacturing of lumber and wood products.

The number of households has shown a decrease of thirteen percent from 1965 to 1970. The household effective buying income for the area has shown an increase of approximately one percent from 1965 to 1970 as compared to a fifteen percent increase for the state as a whole.

The annual retail sales for the area are estimated to be \$4,000,000 as compared to \$3,500,000 in 1965.

The foregoing information confirms the rural nature of the drainage area. The population, income, and sales changes do not reflect an active growth area. There is little to suggest that any likely change in the recreational use of the Smith River will alter the structure of the local economy.

ECONOMIC IMPACT OF CHANGES IN RECREATIONAL USE

There are two basic questions that should be considered in regard to the changing of the recreational use of the Smith River; one, would the change in recreational use have any effect on the number and type of persons using the Smith River for recreation; and two, would the change be expected to produce any economic impact.

Data gathered in various studies of recreational trends indicate it is most likely that improved accessibility to the river would cause those now using the river to seek their recreation in some other area. This would coincide with a larger number of less experienced persons making use of a newly created "easier access" recreational area. The exact number of persons cannot be predicted. The type and quality of the changes in the recreational development of the river, would, for the most part determine the number of persons taking advantage of a new recreational area.

The impact of any change in the recreational use of the river can be viewed in several ways. There are, however, two areas where changes might be expected: increased expenditures in the local area by the recreationist and increased governmental revenue due to changing land values.

It would be reasonable to expect that an increase in persons recreating on the Smith River from outside the immediate area would result in an increase in expenditures within the local area.

The economic impact of increased recreational use depends on who is recreating, and how they are recreating. If those recreating generally commute to the recreation area from outside the local community, then it is also reasonable to assume that some of the impact of their increased recreation will be felt regionally, i.e. outside the local community, rather than entirely within the local area. In addition, the type of recreation has much to do with the economic impact. That is to say that the economic impact generally increases with the intensity of use of the area. This is difficult to quantify, as it depends not only on what facilities are developed, but also on the degree that they are used. In economic terms, we must concern ourselves not only with the supply of recreational facilities, but also with the demand that recreators have for such facilities. It is reasonable to assume that given sufficient demand, and an increase in the supply of facilities, there would be some measurable impact on the local economy. While the exact dollar amounts are not presented, the availability of an increase in sales within the local area is a certainty.

The second impact created by the changing of the recreational use of the Smith River would occur in the area of increased land values. The specifics of how much and how soon are not possible at present, mainly because the values would increase as the factors of supply and demand determine the change. The amount of private land adjacent to the Smith River; the attitude of the landowners toward selling this land; and the value of the land in its current usage; all will determine the supply factors in the marketing of this land. The increased exposure of the Smith River area; the quality of the recreational experiences that have occurred and are to be expected, and the relatively close population centers will all determine

the demand for such land. As the changes in land use occur, the value of that land should also change. With the values of land changing, the tax base should also change, thus presenting to the counties, a change in their revenues. The expected change in land values would be in an upward direction. The degree of change and the timing of that change should not be expected to be as great in this area as might be the case in areas with large investment projects, such as the Chrysler Big Sky Project.

LAND OWNERSHIP AND MAP

Land ownership along the main stem of the Smith River is divided between private, corporate, and public entities. Lands controlled by the private sector are distributed in greatly varying amounts between at least fifty-seven individuals. Over fifty percent of the land bordering the river is in private ownership.

Corporate holdings of Burlington-Northern Railroad and Anaconda Company account for approximately fifteen percent of the land.

Public lands held by the U. S. Forest Service, Bureau of Land Management, and the State account for approximately thirty percent.

The attached map at the back of the report graphically shows the distribution of these various lands.

PRESENT LAND USE

Private Sector

Land in private ownership along the Smith River is presently used almost exclusively for stock raising or agriculture.

Sheep and cattle graze the bottoms and adjacent slopes. Farming is restricted to areas outside the steep canyon except for a few benchlands adjacent to the river.

Some private land along the river has been sold in recent years for cabin site development.

Corporate Sector

Lands in the vicinity held by the Burlington-Northern Railroad are currently being leased to private individuals for grazing or farming operations.

Anaconda Company land is apparently being held in reserve for possible mineral development.

Public Sector

Permits for grazing are issued to private individuals for Forest Service lands adjoining the Smith River Canyon. Timber is being harvested on the headwaters of some of the major tributaries, but present Forest

Service (Lewis and Clark) plans do not anticipate cutting in the canyon. The Helena Forest has developed a land acquisition program designed to acquire and consolidate Forest Service ownership on the river. The Lewis and Clark Forest is developing a comprehensive management plan for the National Forest lands east of Smith River, including the Tenderfoot, and those lands north to and including Deep Creek.

The Bureau of Land Management administers a number of small tracts within the canyon and adjacent to it. Grazing leases are in effect on most BLM controlled lands.

The State of Montana controls lands in the Smith River area under the jurisdiction of the State Land Board and the Fish and Game Commission. The Land Board administers all or portions of fifteen sections on or close to the river. Grazing and agricultural leases are in effect on this land.

The State Fish and Game Commission has acquired land adjacent to the river and access to it in two locations. One area has been developed as a fishing access site and supports access roads, garbage facilities, latrines and picnic areas. The second site has been recently acquired and has not yet been developed. A grazing lease has been issued on a portion of Fish and Game land not directly adjacent to the river.

PUBLIC HEARINGS



The testimony given reflected an exceptional general agreement in principle. The primary concern expressed was that the unique quality of the Smith River and its canyon must be preserved.

In order to obtain an expression of local sentiment for the Smith River's future development, two public hearings were held. One hearing was held at Smith River Hall located near Millegan, and the other was held in White Sulphur Springs. Both meetings were held in cooperation with the local Soil and Water Conservation Districts and both were well attended. The purpose of these hearings was to solicit the opinions of those people who live on or near the river, those persons who frequently now use the river, and primarily those persons, who, to a degree, are responsible for maintaining the river and its immediate environs in their exceptional present condition.

Those persons who chose to speak at these hearings expressed themselves freely and had definite opinions concerning future development. They represented not only rural landowners, but business interests in nearby communities, civic leaders, elected officials, and recreationists from adjacent urban areas.

The testimony given reflected an exceptional general agreement in principle. The primary concern expressed was that the unique quality of the Smith River and its canyon must be preserved. There was no testimony favoring intensive development or any form of commercialization. To the contrary, opinions expressed endorsed only limited development with emphasis on preservation of existing quality. At the Millegan hearing, a motion was made to have the river designated a wild or scenic river. This motion was passed with the vote being approximately ninety in favor and two opposed. It was the only resolution considered at either hearing.

A number of problems with even the current light use being made of the river were mentioned as needing attention and solution. These included littering, sanitation, trespass, fencing, low flows, deteriorating fishing, vandalism, and the unresolved question of navigability.

While the general tone of the meetings began with an almost hostile atmosphere it evolved eventually to the conclusion that if the unique quality of the Smith River were to be preserved, a cooperative effort between all parties now involved was needed. Testimony presented at these hearings was recorded and can be obtained upon demand from the chairman of the Governor's Council on Natural Resources and Development.

PROBLEMS AND RECOMMENDATIONS

Throughout the study period a variety of problems were identified that need resolution if quality recreation is to be maintained on the Smith River. These problems fall generally into two categories; recreational use problems and ecological problems. In some instances these problems overlap.

The recreational use problems include littering, basic sanitation, limited access, cross-stream fencing, vague and conflicting interpretation of navigability rights, and cabin site subdivision.

The most apparent ecological problems are seasonal low stream flows, sedimentation, general water quality, weed control, and fire control.

Littering

The problem of littering is a universal problem now being experienced on recreation areas; the Smith River is no exception. During the past season this was alleviated to some degree by a clean-up campaign conducted by the U. S. Forest Service, the State Fish and Game Department and sportsmen's groups from Great Falls.

Recommendation -- With a minimal development program littering can be reduced by establishing disposal sites at points of road access along with a public information program encouraging the carry-in, carry-out concept along the remainder of the river. Since there is existing legislation and penalties prohibiting littering on public recreation areas, new legislation directed at this problem is unnecessary.

Basic Sanitation

With the exception of minimal latrine facilities at the fishing access site on the upper river and at one private site downstream, no sanitary facilities exist along the river. This situation obviously is undesirable and is degrading the entire area, particularly on or near the more attractive camp sites.

Recommendation -- Basic sanitation facilities along the river must be installed. This can be accomplished by the judicious development of primitive campsites along the river consisting of vault-type latrines located on existing public land.

Limited Access

Although limited access is largely responsible for the present quality of the Smith River, it has also fostered a great deal of conflict over the years. At the present time the public is able to get in and out of the Smith River provided they show some common courtesy to the landowners. State land owned and developed by the Fish and Game Commission provides excellent access to the upper river at this time. For persons wanting access to the middle portion of the river, near the mouth of Trout Creek, access can be gained over a private road. The landowner presently charges a nominal fee for the use of the road, a campground he has developed, and latrine facilities he maintains. Access to the lower river is presently available through the exceptional generosity of an individual landowner living near the mouth of Hound Creek. This individual not only allows access to and from the river, but has for years maintained a picnic area for public use on his own land and at his own expense. Most river floaters leave the river across his property.

Recommendation -- Public access to the middle portion of the river should be secured, preferably through some permanent agreement with the individual currently providing access. An access point on the lower river is definitely needed. Although access is currently provided, we should not expect an individual to continue carrying this burden by himself. The job of access development and maintenance should be assumed by the State through an equitable agreement with the present landowner.

The ownership map shows that considerable public land now borders the river. This land and its boundaries should be judiciously marked. In an effort to acquire additional State lands adjacent to the river, the State Board of Lands and Investments should be authorized to trade tracts of land, which are all near the river, for land of equal value that is actually adjacent to the river. Since Montana's constitution presently prohibits such action, the legislature should recommend to the Constitutional Convention that this prohibition be lifted when such land exchanges are in the public interest. When leases on State land now adjacent to the river expire they should only be renewed with public access provisions.

Cross-Stream Fencing

Since private land crosses the Smith River in numerous places it has been necessary on occasion to string fences across the river. Over the years these fences have been a source of conflict between landowners and river floaters, particularly those using rubber boats.

Recommendation -- For the immediate future an effort should be made to mark existing necessary fences to adequately warn river floaters of the presence of fences. Over the long range, alternatives to fencing across the river should be devised and implemented in cooperation with the landowners.

Navigability Rights

The Smith, like practically all other rivers in Montana, has never been declared navigable in the courts. Opinions regarding its navigability are as varied as the number of individuals offering them. If the floating of the river is to continue when sufficient flows exist, then the right of recreationists to float the river without interference must be established. This in no way implies that water is to be diverted from existing use in order to maintain minimum stream flows.

Recommendation -- To accomplish this and other later recommendations, the legislature should enact legislation declaring the Smith River a state recreational waterway; declaring it a navigable stream for the purpose of recreating; and further declaring that fish, wildlife and recreation are legal beneficial users of water in the Smith River and that the Montana Fish and Game Commission can appropriate water without diversion in the Smith River above the mouth of Hound Creek.

Cabin Site Subdivision

Since considerable land adjacent to the Smith River is in private ownership, the potential to subdivide it into cabin sites poses several threats to the river. Poorly planned and unregulated cabin site subdivision obviously will detract from the scenic values of the area. Perhaps more serious will be the contamination that can originate in a densely developed cabin site area. With most of the good sites likely to be constructed on loose alluvial material the effluent introduced into this material will rapidly leach to the river. Once again limited access has precluded intensive development up to this time. This situation cannot be expected to last, and it is imperative that this problem be reckoned with.



Proper planning and zoning could restrict cabin developments to areas beyond line-of-sight from the river.

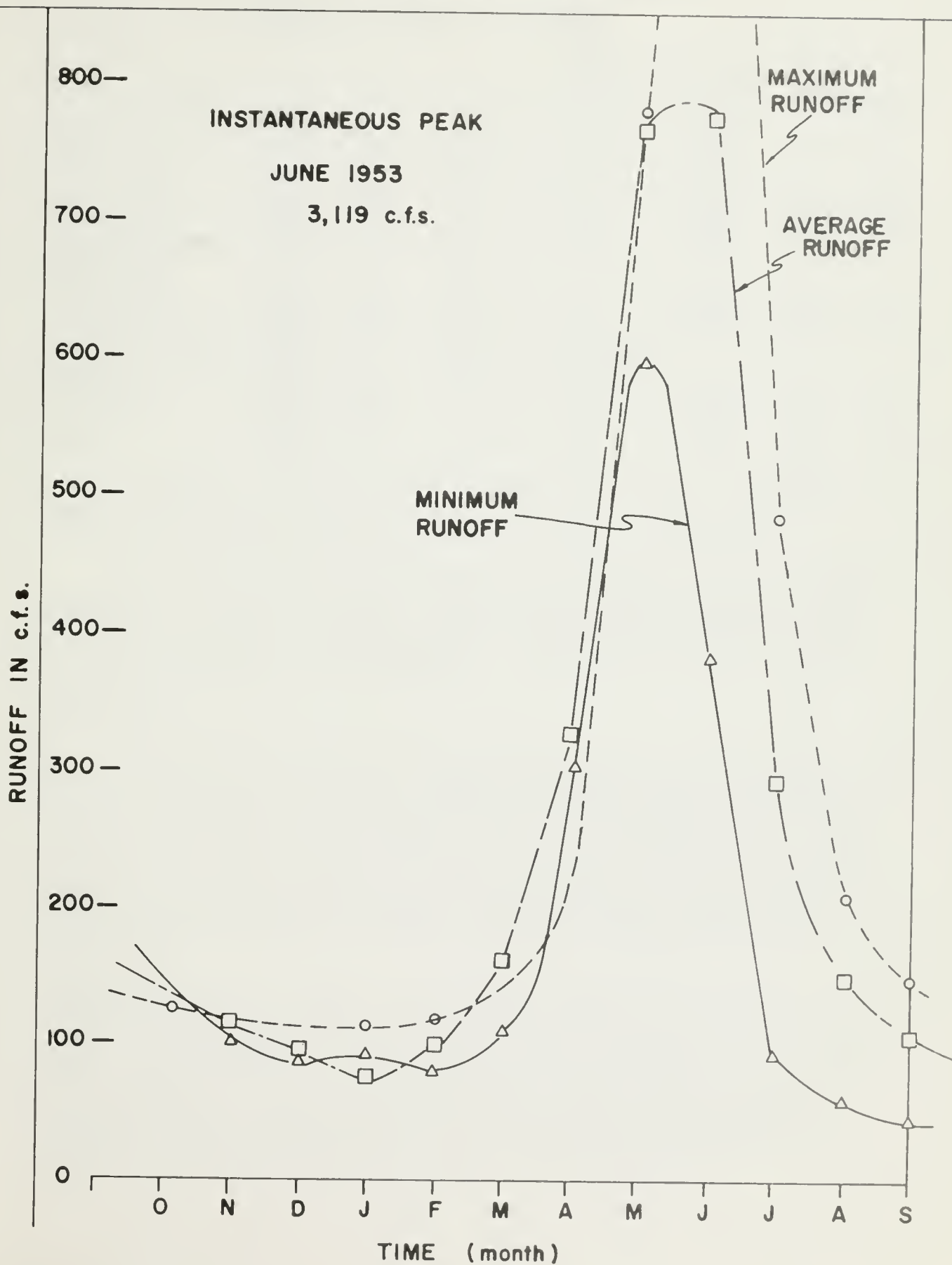
Recommendation -- The answer to this problem is identical to many similar problems throughout Montana; rural land use zoning authority is needed now if we are to maintain quality. The most desirable alternative to this authority is the appropriation of a considerable sum of money to acquire scenic easements and land use options through which to control or eliminate undesirable developments. It is also imperative that where cabin sites are developed, closed sewage systems be mandatory.

Stream flows

Stream flows affect the Smith River in two ways. They limit the season that the river can be easily navigated, and they affect the habitat that produces the fish populations. Figure 1 is a hydrograph developed from ten years of data collected at the Eden gaging station located near the lower end of the river under study. It demonstrates that while a considerable quantity of water is discharged from the drainage there is a need for water management to eliminate low flows. During this ten year period the minimum flow observed was 3.1 cubic feet per second on September 1, 1961. For all practical purposes the Smith River was dry. The effect low flows of this nature have on recreational floating is obvious. The effect they have on the fish population was discussed previously in this report.

Recommendation -- As the hydrographs indicate, water management directed at reducing the extremes is essential. This can be accomplished through enlightened land management, water management, and possibly off-stream storage. At the present time an ecological study of the entire watershed is being conducted by the Fish and Game Department. Hopefully this study will identify land management opportunities that will control runoff and assist in stabilizing stream flows. When this data is available they will be supplied to individuals and agencies with land management responsibilities. Several potential off-stream storage sites have been identified by the Water Resources Board and are listed in the following table. Development of one or more of these sites might well alter the feasibility of development at remaining sites.

HYDROGRAPH OF SMITH RIVER NEAR EDEN, MONTANA



POSSIBLE OFF-STREAM STORAGE SITES

Name	County	Sec.	T.	R.	Height (ft)	Capacity (acre-ft)	Surface Drain. Area (Acre-sq.mi.)	
Benton Gulch	Meagher	30	11N	4E	100	2,640	78	50
Thomas	Meagher	NW¼29	11N	4E	61	3,042	137	12
Benton Creek	Meagher	21	11N	4E	37	660	40	+55
Fort Logan	Meagher	NW¼31	11N	5E	100	102,000	2,320	600
Neland Creek	Meagher	11,12	10N	6E	100	9,740	256	32
Newland Creek (Albright)	Meagher	29	11N	7E	50	1,480	77	22
Sheep Creek	Meagher	36	12N	7E	40	1,810	104	40
Buckingham	Meagher	NW¼35	10N	5E	110	139,600	4,530	510
Little Birch Cr.	Meagher	15	9N	5E	100	4,750	112	15
Four Mile Creek	Meagher	25	10N	7E	No Data			
Wood Gulch	Meagher	36	9N	5E	No Data			
Moss Agate	Meagher	SE¼7	7N	7E	43	3,500	200	54
Ringling	Meagher	32	7N	8E	46	3,760	242	55
Dorsey	Meagher	32	7N	8E	46	6,470	420	4.5

The success of developing off-stream storage in part is contingent on passage of legislation authorizing the appropriation of water for fish, wildlife and recreation without diversion as recommended earlier.

At the present time all available water in the North Fork of the Smith River Reservoir is under contract. However, if the function of this reservoir were broadened to include flood control, winter releases of carry-over storage could be used to supplement low winter flows. Further study into this possibility is recommended.

Water Quality

At the present time the general water quality of the Smith River is good. The town of White Sulphur Springs discharges the treated effluent from its raw sewage stabilization lagoon to the Smith River. At this time the treatment is considered adequate. While not substantiated, it is possible that irrigation return flows carry fertilizers and pesticides into the streams. The major objective of all our activities should therefore be directed at maintaining existing water quality, improving it where possible, and avoiding new sources of pollution. Perhaps the most immediate new threat to the water quality of the Smith River is recreational home-site development.

Recommendation -- Once again zoning authority would be an excellent tool to control development of the river bottomland and thereby remove the threat posed by overdevelopment, or development too near the stream. In lieu of this authority strict sanitary restrictions on recreational tract developments are essential. It is recommended that closed sewage systems be required on any recreation developments and cabin site subdivisions. Improved irrigation efficiency to avoid return flows conceivably carrying excess fertilizer and possibly pesticides is also needed.

Sedimentation

Sediment is perhaps the most common and widespread pollutant in Montana streams. The Smith River suffers, seasonally at least, from this pollutant. The most probable effect silt is having on the aquatic ecosystem of the river is depression of the aquatic insect production by physically filling the spaces between stones in stream bed gravels. This eliminates the places where these insects must live. While sedimentation frequently interferes with trout egg incubation, there is no evidence of trout reproductive failure at this time. While the Soil Conservation Service considers the annual sediment yield to the Smith River to be moderately low, there is evidence of unnecessary siltation of the Smith River and some of its tributaries.

Recommendation -- Perhaps the most obvious source of sedimentation in the watershed is the Sheep Creek to Newland Creek water diversion which is causing severe gullying. The current plan of development for the Newland Creek watershed project is designed to rectify this situation. Other more typical causes of sedimentation can be alleviated through the application of land husbandry measures such as grassed waterways, strip-cropping, deferred grazing, grass seedings, gully control structures, properly designed irrigation systems and stream bank fencing.

Weed Control

During the course of the public hearing it was pointed out that a serious problem exists along the river in relation to weed control. A particularly noxious weed, leafy spurge, is found along the river and is viewed as a threat by adjacent landowners. Landowners further feel that flood waters distribute seeds of this weed throughout the floodplain. It is apparently capable of resisting all but the most toxic weed control chemicals. These extremely toxic sterilants are of questionable value and are suspected of doing serious environmental damage.

Recommendation -- Although leafy spurge is a recognized problem, attempt at its control should center around maintaining healthy ranges capable of withstanding invasions. Where there is no alternative to chemical control, such programs should be stringently controlled and directed toward individual noxious species. Attempted control programs must be conducted in a manner which is not detrimental to the watershed ecology.

Fire Protection

Historically, recreational use brings man-caused fires. Lightning-caused fires occur every year in the study area. Flashy ground fuels, coupled with limited access, provide opportunities for a fire to become large. Rapid runoff and siltation are a result of fires.

Recommendation -- Meagher County and Cascade County, with the assistance of the State Board of Forestry Cooperative Fire Protection Program, are providing fire protection to the area. It is our recommendation that this protection continue to be upgraded to take care of problems caused by increasing fire occurrences.



The study ordered by House Joint Resolution No. 12 has made it apparent that to do nothing to preserve the area in question would result in a continued deterioration of the values all parties involved are seeking to maintain.

SUMMARY AND CONCLUSION

In arriving at the following basic conclusion, the study team considered the following points; the unique scenic qualities of the area, the present semiwilderness aspect of the river, the ecology of the river, the opinions of the landowners and recreationists, and the expressed opinions of commercial and civic interests from the affected communities. On the basis of these considerations, it is concluded that development of a state park, in its commonly accepted meaning, is not appropriate for the Smith River or its immediate environs. The area should be maintained in essentially its present primitive state.

The study ordered by House Joint Resolution No. 12 has made it apparent that to do nothing to preserve the area in question would result in a continued deterioration of the values all parties involved are seeking to maintain. The problems currently plaguing this area are rapidly increasing and must be solved if this unique area is to be used to a desirable extent yet not be destroyed. Proposals and recommendations to solve these problems are being made in this context.

The Smith River is an exceptional area for a variety of reasons. Through a rare combination of topographic features and husbandry a place of unique beauty and exceptional quality has been preserved. To hastily commit to a program of extensive development would be contrary to the findings of this study and contrary to the will of the people expressing themselves on this matter. However, to ignore this exceptional place and leave its fate to chance would be equally inappropriate. To strike the delicate balance between these extremes, to strive for the quality that so often eludes us, we suggest the following legislation and urge its passage:

- (1) An Act designating the Smith River a State Recreational Waterway; providing that fish, wildlife, and recreation are legal beneficial users of water; and declaring it a navigable stream for the purpose of recreation.
- (2) An Act recommending to the Constitutional Convention, revision of Montana's Constitution to permit the exchange of State lands with private individuals when such an exchange is in the public interest.
- (3) An Act appropriating funds for acquiring scenic easements and obtaining land use options.
- (4) A resolution accepting this report and returning it to the Governor's Council on Natural Resources and Development for implementation of its recommendations by appropriate state agencies.

We further urge the passage of legislation that would authorize land-use zoning in the State of Montana.

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